

## TECHNICAL MEMORANDUM

DATE: October 29, 2013  
TO: Mary Millner, SME, EPA Region 10  
FROM: Julie Sharp-Dahl, Project Manager  
Bristol Environmental Remediation Services, LLC  
RE: EPA Contract No. EP-W-12-009  
Task Order (TO) B-7, Amendment 1, Western Gas Corrective Action

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Bristol Environmental Remediation Services, LLC (Bristol), has prepared this Technical Memorandum (Tech Memo) at the request of the U.S. Environmental Protection Agency (EPA). The Tech Memo provides results for September 2013 activities conducted at the Western Gas Leaking Underground Storage Tank (LUST) site, located on the Yakama Nation, in Toppenish, Washington. The tasks associated with TO B-7, Amendment 1 included planning and initiating corrective action at the Western Gas site.

### **SITE BACKGROUND**

The following sections present background information for the Western Gas site.

### **SITE SETTING**

The Western Gas site is located on the Yakama Indian Reservation at 401 S. Elm Street, Toppenish, Washington (Figure 1). The site is 0.9 acres in size and is bounded by 1st Avenue to the north, a Taco Bell and Kentucky Fried Chicken restaurant to the south, Elm Street to the east, and El Gallo Giro Grocery and Taco Shop to the west. The site supports a concrete pad and a gas station island with canopy and the Western Gas convenience store (Figure 2). The majority of the site is paved. EPA Region 10 lists the site as an active LUST site (EPA, 2012), identified as EPA Facility No. 4260105.

## **SITE GEOLOGY AND HYDROLOGY**

Groundwater is located approximately 13 feet below ground surface (bgs) with seasonal variations of 6-8 feet which are a function of irrigation and recharge (EPA, 1997). In general, groundwater flows to the southeast. There is a municipal water supply well approximately 1,000 feet east-southeast of the site. Site soils consist of clayey silt mixed with sand and gravel to a depth of 7 to 10 feet bgs and silty, sandy, gravel with cobbles below the clayey silt.

## **SITE HISTORY**

From the early 1950s through 1991, the property operated as a bulk plant for distribution of petroleum products, a mini-mart that retailed petroleum products, and an attached car wash. Contamination was first identified at the site in 1991 (White Shield, 1991). A detailed summary of the environmental activities that were conducted at the Western Gas site from 1991 through 2012 was presented in the Corrective Action Plan prepared by Bristol (Bristol, 2013b).

In 2012, the EPA tasked Bristol to perform a site assessment at the Western Gas site. In November 2012, Bristol mobilized to the site to perform the site assessment. Site assessment activities (which are described in greater detail in Bristol's Site Assessment Report [Bristol, 2013a]) included advancement of six direct-push borings, installation of three temporary monitoring wells, redevelopment of existing monitoring wells, and collection of subsurface soil and groundwater samples. Results of the site assessment indicate that the majority of petroleum contamination remaining on the site is isolated to the southeast corner of the property. This is an area that was not excavated during previous contaminated soil removal efforts due to proximity to Elm Street.

## **CONTAMINANTS OF CONCERN**

Based on the results of the 2013 site assessment the contaminants of concern (COCs) at the Western Gas LUST site are total petroleum hydrocarbons (TPH) (including gasoline range organics [GRO] and diesel range organics [DRO]).

For the limited soil sampling that was performed in support of this corrective action, analytes and analytical methods included GRO by Northwest TPH Method (NWTPH)-Gx, and DRO by NWTPH-Dx.

## **SCOPE OF WORK**

In 2013, the EPA tasked Bristol with performing corrective action at the site, including identification of an appropriate corrective action technology. The objective of the corrective action is to reduce concentrations of COCs in subsurface soil in the southeast corner of the property and to subsequently restore the groundwater quality at the site (as represented by well MW2) to concentrations below MTCA Method A groundwater cleanup levels and to minimize the potential for exposure to humans and the environment.

The technology selected for the corrective action was chemical oxidation and enhanced bioremediation achieved through injection of Regenesi's remediation products into the contaminated zone. The approach of in-situ treatment through chemical oxidation and enhanced bioremediation was selected by EPA and Bristol. Regenesi provided technical assistance with design of the injection parameters based on site-specific analytical data, soil lithology types, and hydrogeology.

The products proposed for use on the site include RegenOx and ORC Advanced. RegenOx is a remediation product that directly destroys contaminants through oxidation reactions. ORC Advanced is a remediation product that accelerates naturally occurring aerobic bioremediation by supplying oxygen to the contaminated media. Further discussion of RegenOx and ORC Advanced was presented in the Corrective Action Plan (Bristol, 2013b).

Regenesis recommended using three to five injections of RegenOx to treat the soil contamination at the site, followed by one injection of ORC Advanced to treat the remaining low-level groundwater contamination. At this time, Bristol is only funded to perform one injection event of RegenOx, and this Tech Memo details this initial injection event. If additional injection events are required to bring groundwater concentrations below cleanup levels, they may be scheduled and funded at a future date.

## **CORRECTIVE ACTION ACTIVITIES**

Corrective action activities performed September 23 through 25, for the Western Gas site included the following:

- Performed site reconnaissance and utility locates.
- Cored two GeoProbe borings using direct push technology.
- Field screened the soil cores, and collected one soil sample from one of the borings.
- Advanced six injection points using direct push technology and injected RegenOx into the subsurface at each injection point.
- Monitored the static water level (SWL) in MW2, located within the treatment area.

Drilling and injection activities were performed by Bristol's subcontractor Pacific Soil & Water (PS&W) located out of Tigard, Oregon. Oversight and sampling was performed by Bristol's onsite geologist. The EPA subject matter expert (SME) and representatives of the Yakama Nation Environmental Management Program were also onsite during the initial phases of the corrective action activities.

Attachments to this Tech Memo include the following:

- Attachment 1 – Figures 1 through 3
- Attachment 2 – Photograph Log
- Attachment 3 – Field Notes and Soil Boring Logs
- Attachment 4 – Permits
- Attachment 5 – Laboratory Analytical Data

## **Site Reconnaissance**

Upon arrival on the Western Gas site on the afternoon of September 23, Bristol personnel identified the location of the treatment area proposed in the Corrective Action Plan (Bristol, 2013b) and marked its boundaries with pink marking paint. The treatment area was defined in the Corrective Action Plan as a rectangle measuring 30 feet long by 15 feet wide, located between the former soil excavation and Elm Street (Figure 2). Bristol personnel also marked the proposed locations for the six injection points, as well as proposed locations for the two cored soil borings.

The Corrective Action Plan called for two of the injection points themselves to be cored and sampled. However, upon consultation with the drilling/injection subcontractor, it was determined that injection points cannot be cored and maintain a tight seal for injections. As a result, proposed locations for the two cored borings were marked adjacent to proposed injection points.

## **Utility Locates**

Prior to mobilization to the Western Gas site, Bristol utilized the Washington Utility Notification Center to contact utility companies and request that locations of underground utilities be marked. Bristol also hired a utility locate service, Utilities Plus, LLC, located in Yakima, Washington, to do additional screening for underground utilities that may be located in the treatment area.

Through these means, only one underground utility was identified running through the treatment area, a currently unused water line for landscape irrigation (Figure 3).

## **Cored Borings and Soil Sample Collection**

The two cored borings were planned in order to refine the treatment interval (if necessary) and to collect soil samples for laboratory analysis to determine the current levels of soil contamination present in the treatment area.

Upon arrival at the Western Gas site, the injection supervisor from Bristol's drilling/injection subcontractor (PS&W) expressed concern that the proposed locations for the cored borings were too close to the injection points, and had the potential of becoming pathways for the injected RegenOx. This could prevent dissemination of the RegenOx into the desired subsurface interval. The PS&W injection supervisor recommended minimizing the number of cored borings and moving them as far from injection points as practical. Upon consultation with the EPA SME, who was onsite, and the Bristol project manager, the number of cored borings was reduced to one, and the proposed location of the boring was moved up against the southwest boundary of the treatment area (SB-01 on Figure 3).

However, refusal was encountered in SB-01 at approximately 15 feet bgs, which was above the treatment interval of 16-19 feet bgs. Upon consultation with the EPA SME, a field decision was made to move the rig several feet and make one more attempt to collect a core from the treatment interval. This boring (SB-02 on Figure 3) achieved a depth of 20 feet bgs, allowing core of the treatment interval to be examined and sampled.

Soil borings were advanced using direct-push drilling technology. Continuous cores from the two borings were collected using a Macro-Core soil sampler into 5-foot acetate sleeves. The cored soil boring locations are depicted on Figure 3.

The entire length of each soil boring was field-screened using a photoionization detector (PID) and lithology characteristics were observed and noted. The PID readings and soil lithology are documented on soil boring logs located in Attachment 4. Field screening was performed using an in-situ rapid acquisition technique. For this technique, small divots were

made approximately every 6 inches along the length of the core. The inlet of the PID was immediately inserted into each freshly exposed divot, taking care not to touch the material. Field personnel recorded the highest reading at each divot on the boring log. No elevated PID results were noted for either of the two cored soil borings.

One analytical soil sample was collected from the SB-02 boring. The soil sample was collected from a depth (16.0 to 16.5 feet bgs) within with the treatment interval (16 to 19 feet bgs), which corresponds with the reported depth of soil contamination. The samples were submitted for laboratory analysis to TestAmerica, in Tacoma, Washington. The sample was collected directly from the split-open acetate sleeve using a gloved hand (for the DRO sample) and a Terra Core sampler (for the GRO sample). Sample jars were filled according to analyte volatility: first GRO, and then DRO.

For the soil sample jar that was submitted to the laboratory for GRO analysis (NWTPH-Gx), a Terra Core sampling device was used to transfer 10 grams of soil from the boring to two 40-milliliter (mL) containers. The 40-mL containers contained 10 mL of methanol. The 40 -mL containers were placed on ice and kept at a temperature between 0 and 6 degrees Celsius (°C) until delivery to the laboratory.

For the soil sample jar that was submitted to the laboratory for DRO (NWTPH-Dx), the sample was collected using clean gloved hands and placed into one 4-ounce jar. The sample container was kept on ice at a temperature between 0 and 6°C until delivery to the laboratory.

## **Injection Test**

Prior to the first injection, at injection point IP6, an injection test was performed, during which 10 gallons of clean potable water was injected into the treatment interval to determine how well the formation would accept the RegenOx. This was a variation from the Corrective Action Plan, which called for an injection test of 20 gallons of water. The

variation was made based on advice from the drilling/injection subcontractor's injection supervisor.

The injection test proceeded smoothly without any jumps in the pressure noted at the injection point manifold, indicating that the formation should readily accept the RegenOx solution.

## **Injections**

The six injection points (IP1 through IP6) are depicted on Figure 3. The treatment interval for each injection point was 16 to 19 feet bgs, based on descriptions of the impacted soil interval from the 1995 soil removal. For each injection point, the following volumes and quantities were used to achieve a 5% oxidizer solution (as recommended by Regenesis): 57 gallons of water, 25 pounds of RegenOx Part A, and 11 pounds of RegenOx Part B. For each injection point, one third of the RegenOx solution designated for that point was injected into each of three depths within the treatment interval.

At each injection point, the pre-probe with an expendable tip was initially driven to the bottom of the treatment interval (19 feet bgs) using standard 1-inch diameter drive rods, and the expendable tip was disconnected.

Half of the RegenOx solution needed for that injection point was then mixed in a 55-gallon drum outfitted with valve at the bottom of the drum. The drum was staged on a platform so that the valve was located above the injection pump, allowing it to be gravity-fed into the pump's hopper. For each batch of solution, a premeasured volume of water was added to the drum, followed by a premeasured amount of RegenOx Part A, and then the solution was mixed until the oxidizer was dissolved. Then, a premeasured amount of RegenOx Part B was added and the solution was mixed for at least 5 minutes. The solution was then gravity fed into the injection pump hopper. As the hopper had a maximum volume of 10 gallons, each batch of RegenOx filled the hopper twice.



Once the hopper was prepared, an injection manifold (outfitted with a pressure gauge and a release valve) was connected to the top of the drive rods, and the injection pump was connected to the injection manifold with a hose. The 57 gallons of RegenOx was then injected into the treatment interval with the bottom of the pre-probe at three different depths: 19, 17.75, and 16.5 feet bgs. At each depth, one third (approximately 19 gallons) of the RegenOx solution prepared for that injection point was injected. When the injection was complete, the pre-probe and drive rods were removed and the open borehole was slowly filled with bentonite pellets to within 0.5 feet of the ground surface. The borehole was then finished with a surface seal of quick-set concrete, and an asphalt patch.

The majority of the injections were performed without an appreciable increase in pressure at the injection manifold. However, during the injection at IP6, pressure would momentarily rise as high as 200 pounds per square inch (PSI). The pressure would immediately drop back to 0 PSI when the injection pump cycled off. The driller/injection subcontractor slowed the pump rate to its lowest setting to avoid over-pressurizing the injection point.

### **Water Level Monitoring**

The static water level (SWL) in MW2 was monitored through the course of the injections in order to make a qualitative assessment of the effectiveness of the injections in propagating the RegenOx into the aquifer. Injections at IP1, IP2, IP3, IP4, and IP5 all resulted in measurable changes in the SWL at MW2 (Table 1). The injection at the closest injection point to MW2 (IP1), located 6.0 feet from the monitoring well, resulted in an increase of 5.28 inches in the SWL.

**Table 1 MW2 Water Levels During Injections**

<b>Injection Point</b>	<b>DTW Measured Immediately Before Injection (feet btoc)</b>	<b>Shallowest DTW Measured During Injection (feet btoc)</b>	<b>Change in SWL During Injection (feet)</b>	<b>Distance from MW2 (feet)</b>
IP1	11.76	11.32	0.44	6.1
IP2	11.76	11.66	0.10	9.6
IP3	11.76	11.72	0.04	17.4
IP4	11.76	11.64	0.12	7.4
IP5	11.76	11.72	0.04	13.2
IP6	11.76	11.76	0.00	20.2

Notes:

btoc = below the top of casing

DTW = depth to water

SWL = static water level

The fact that there were measurable changes in the water level at MW2 associated with injections as far as 17.4 feet from the well indicate that the radii of influence of the injection points provide good coverage of the treatment area. These observations are considered a positive sign that the RegenOx was effectively disseminated into the treatment interval.

Conversely, it is evident that the injected RegenOx solution did not find a path of lower resistance directly into the sand filter pack of MW2 (effectively short-circuiting the treatment). The moderate increase of 0.44 feet in the SWL during the injection closest to MW2 (6.1 feet away at IP1) could not represent a significant fraction of the 57 gallons of solution injected at this point. If the injection had been short circuited, the fluid level in MW2 would have neared or reached the level of the ground surface.

## RESULTS AND DISCUSSION

Laboratory analytical results for the one sample collected during the project (13WGBS02-16) are presented in Table 2 below:

**Table 2 Soil Analytical Results**

Sample ID:				13WGBS02-16
Sample Description:				Collected from SB-02 at 16 feet bgs
Lab Work Order:				580-40550-1
Sample Collection Date:				9/24/13
Analytical Method	Analyte	MTCA Clean Up Level	Units	Analytical Result
NWTPH-Gx	Gasoline	100	mg/kg	ND (0.98)
NWTPH-Dx	Diesel (C10-C24)	2,000	mg/kg	ND (6.2)
NWTPH-Dx	Motor Oil (C24-C36)	2,000	mg/kg	17 J B

Notes:

B = analyte was detected in an analytical blank

bgs = below the ground surface

ID = identification

J = result is an estimated quantity with an unknown bias

mg/kg = milligrams per kilogram

ND = not detected above reporting limit (in parentheses)

COCs were not detected at significant concentrations in the soil sample collected from soil boring SB-02. Additionally, no elevated PID results were recorded in either of the two soil borings. These lines of evidence indicate that SB-02 is located outside of the current contaminated soil plume. This may be a result of natural attenuation of the soil contamination, or of the contaminated soil plume being smaller than originally anticipated.

As concentrations of COCs above MTCA Cleanup Levels were detected in MW2 at the most recent sampling event, the groundwater plume likely extends beyond the soil contamination plume.

## **RECOMMENDATIONS**

The EPA will initiate a quarterly groundwater monitoring program at the Western Gas site at a future date. Based on the results of that groundwater sampling, additional rounds of RegenOx injection, or a round of ORC Advanced injection may be deemed necessary in order to restore groundwater quality at the site to concentrations below MTCA Method A groundwater cleanup levels. Based on Regenesi's recommendations, future injection points should be offset by about 4 feet from the previous round of injections.

The EPA may perform future injections by triggering options in Bristol's Task Order.

## REFERENCES

Bristol Environmental Remediation Services, LLC (Bristol), 2013a (March). *Western Gas LUST Site, 401 S. Elm Street, Toppenish, Washington, Site Assessment Report, Revision 1.*

Bristol, 2013b (July). *Western Gas, 401 S. Elm Street, Toppenish, Washington, Corrective Action Plan, Revision 1.*

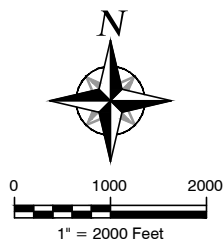
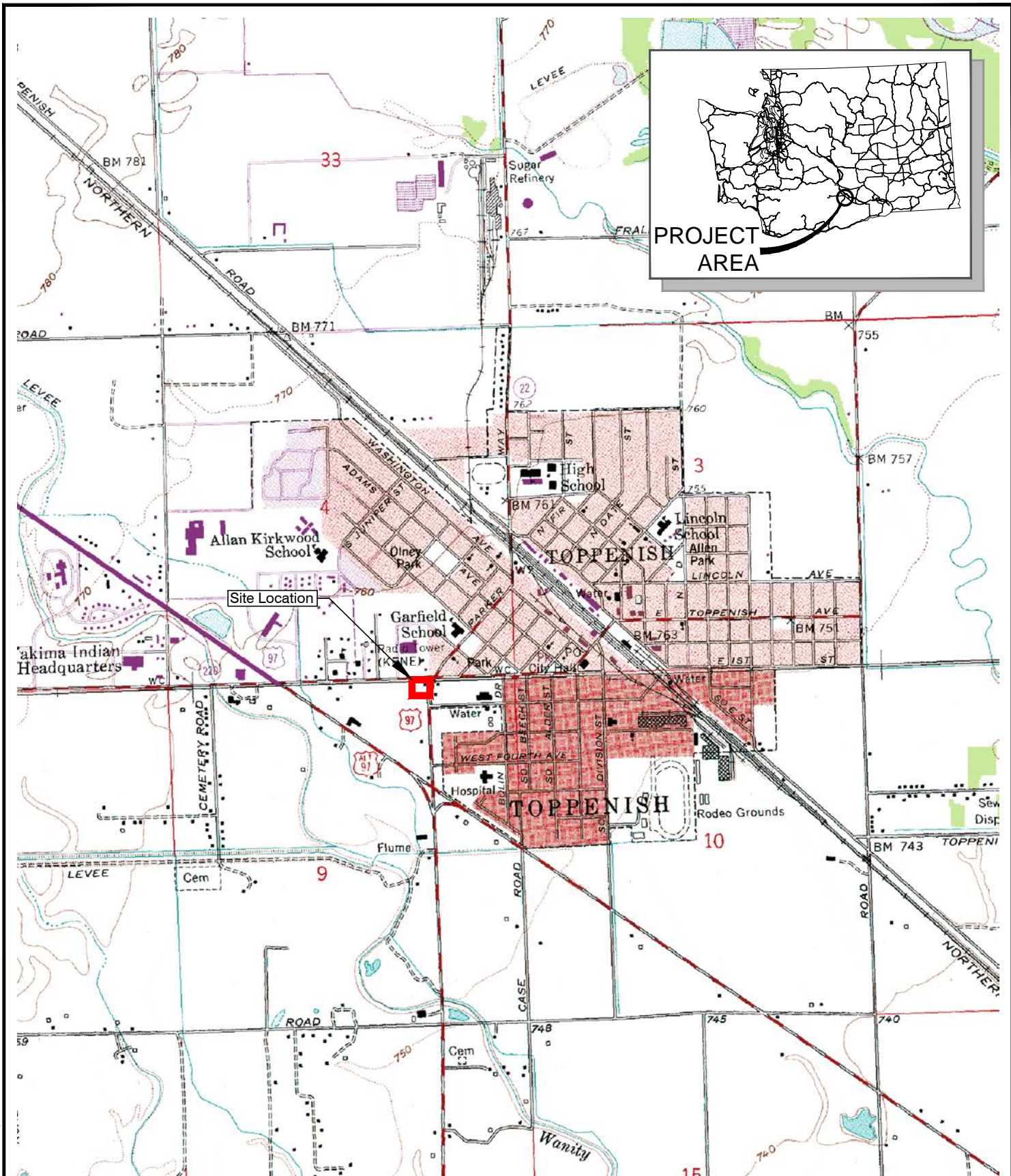
U.S. Environmental Protection Agency (EPA), 1997. Basis of Decision, Brand X Tank n' Tummy, Toppenish Washington, EPA UST Facility No. 4-26105. May 27.

EPA. 2012. EPA Region 10 Active LUST Sites on Indian Lands. Available at: [http://yosemite.epa.gov/r10/water.nsf/UST/UST+Info+Resources/\\$FILE/Active-IL-LUSTs.pdf](http://yosemite.epa.gov/r10/water.nsf/UST/UST+Info+Resources/$FILE/Active-IL-LUSTs.pdf) . Accessed October 3, 2013.

White Shield, Inc. 1991. *Site Assessment Report for Underground Storage Tank Closure at Brand X Tank & Tummy Toppenish, WA.*

## **ATTACHMENT 1**

### **Figures**



**FIGURE 1**  
 EPA B-7 WESTERN GAS  
 401 S. ELM ST.  
 TOPPENISH, WA 98948  
**SITE LOCATION MAP**

**Bristol**



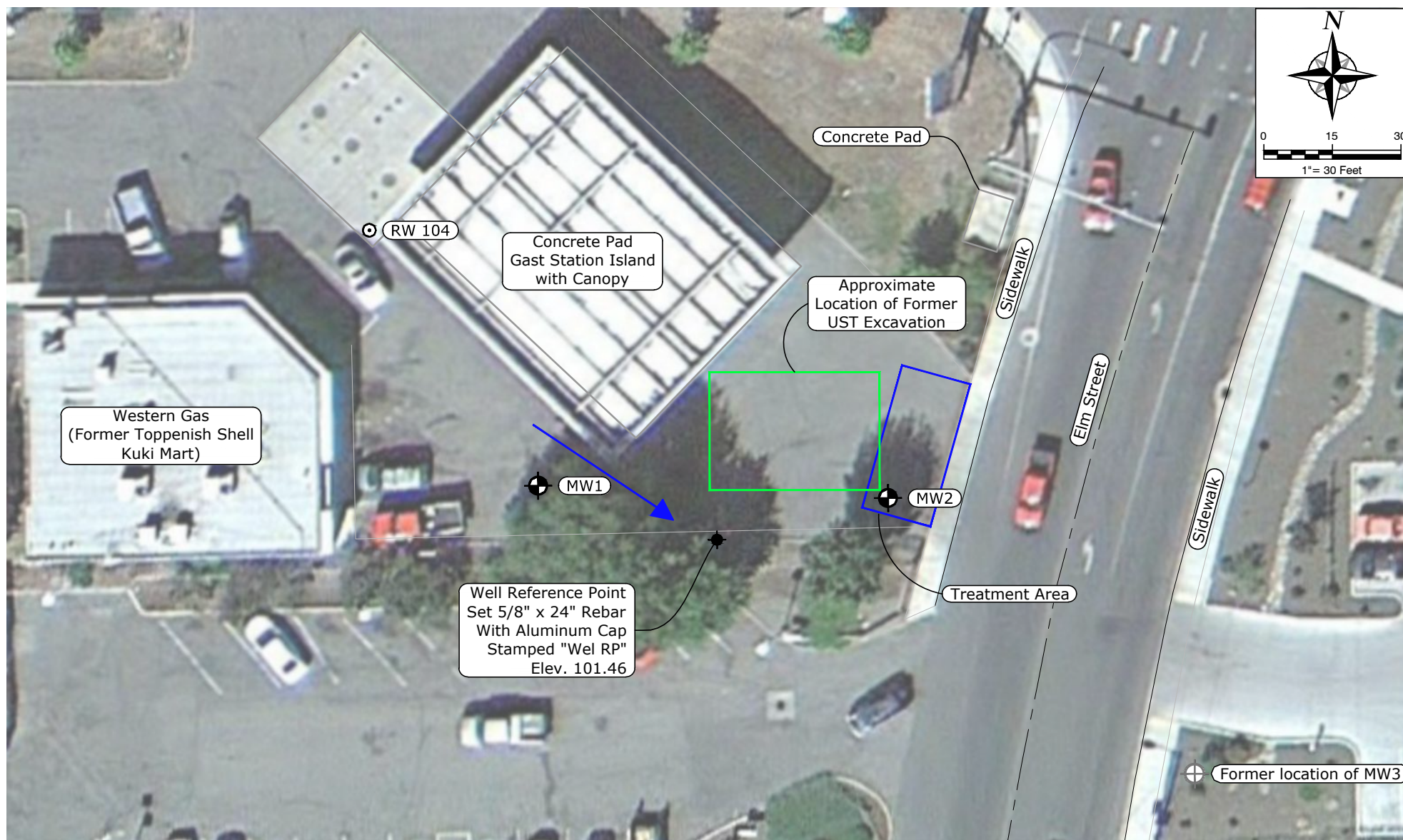
ENVIRONMENTAL  
REMEDIALATION SERVICES, LLC

Phone (907) 563-0013 Fax (907) 563-6713

DATUM:	NA
PROJECTION:	NA
PROJECT NO.	34130043

DATE	06/18/13
DWN.	MTG
SCALE	SHOWN
APPRVD.	JSD





### Legend

- existing monitoring well
- former monitoring well
- release detection well
- well reference point
- groundwater flow direction
- BH
- RW
- TW

### Notes:

- Clayey silt with sand to depth of 7-10 feet below ground surface.
- Silty sandy cobbly gravel below 7-10 feet below ground surface.
- Groundwater  $\approx$  13 feet below ground surface.
- RW104 is a release detection well.
- MW3 is no longer present.

FIGURE 2  
 EPA B-7 WESTERN GAS  
 401 S. ELM ST.  
 TOPPENISH, WA 98948  
**SITE MAP**

**Bristol**

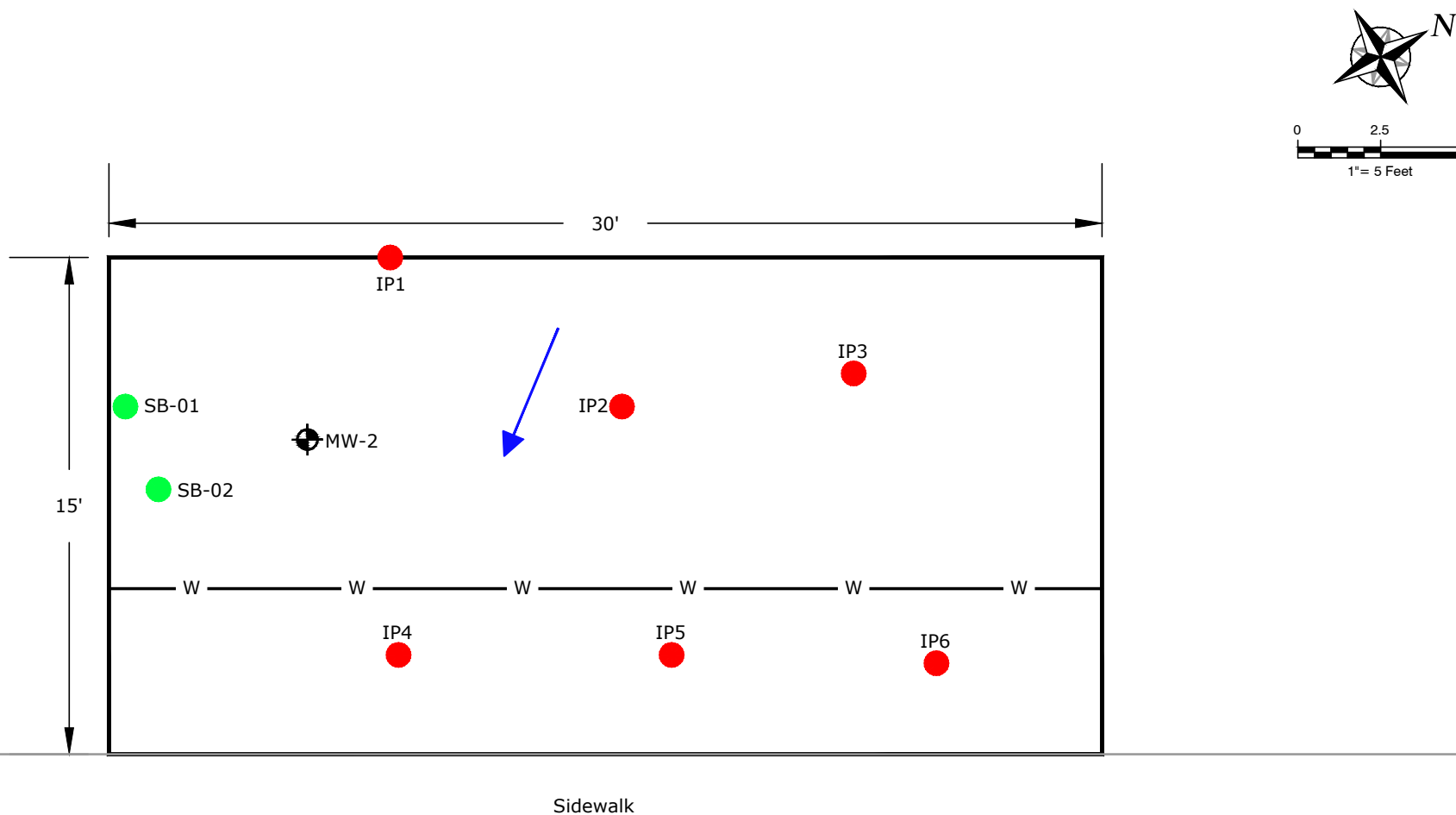
ENVIRONMENTAL  
 REMEDIATION SERVICES, LLC

Phone (907) 563-0013 Fax (907) 563-6713

DATUM:  
 NAD 83  
 PROJECTION:  
 WA SP ZS FT  
 PROJECT NO.  
 34130043

DATE 06/18/13  
 DWN. MTG  
 SCALE SHOWN  
 APPRVD. JSD





# Legend






-  Existing Monitoring Well
-  First Round RegenOx Injection Point
-  Soil Boring
-  Groundwater Flow Direction
-  W Water Line

FIGURE 3  
 EPA B-7 WESTERN GAS  
 401 S. ELM ST.  
 TOPPENISH, WA 98948  
**TREATMENT AREA MAP**

**Bristol**

ENVIRONMENTAL  
 REMEDIATION SERVICES, LLC

Phone (907) 563-0013 Fax (907) 563-6713

DATUM: NAD 83  
 PROJECTION: WA SP ZS FT  
 PROJECT NO. 34130043

DATE 06/18/13  
 DWN. NAP  
 SCALE SHOWN  
 APPRVD. JSD

## **ATTACHMENT 2**

### **Photograph Log**



**Photo 1:** Treatment area with proposed injection points and soil boring locations marked in pink paint  
**Direction:** North

**Date:** 09/23/13  
**Photographer:** M.Faust



**Photo 2:** Drill crew coring soil boring SB-02  
**Direction:** Northwest

**Date:** 09/24/13  
**Photographer:** M.Faust





**Photo 3:** Drill crew grouting and patching soil boring  
SB-02

**Direction:** North

**Date:** 09/24/13

**Photographer:** M.Faust



**Photo 4:** Injection point IP-06 with pressure gauge

**Direction:** Southwest

**Date:** 09/25/13

**Photographer:** M.Faust





**Photo 5:** Injection pump and hopper set up for injection point IP-06  
**Direction:** West

**Date:** 09/25/13  
**Photographer:** M.Faust



**Photo 6:** Driving injection point IP-05  
**Direction:** Northeast

**Date:** 09/25/13  
**Photographer:** M.Faust

## **ATTACHMENT 3**

### **Field Notes and Soil Boring Logs**

**Matt Faust**

Bristol Environmental

111 W 16th Ave, Ste 301

Anchorage, AK 99501

(907) 563-0013

## Regen Ox Injections

## Western Gals

Toppenish, WA

September 2013

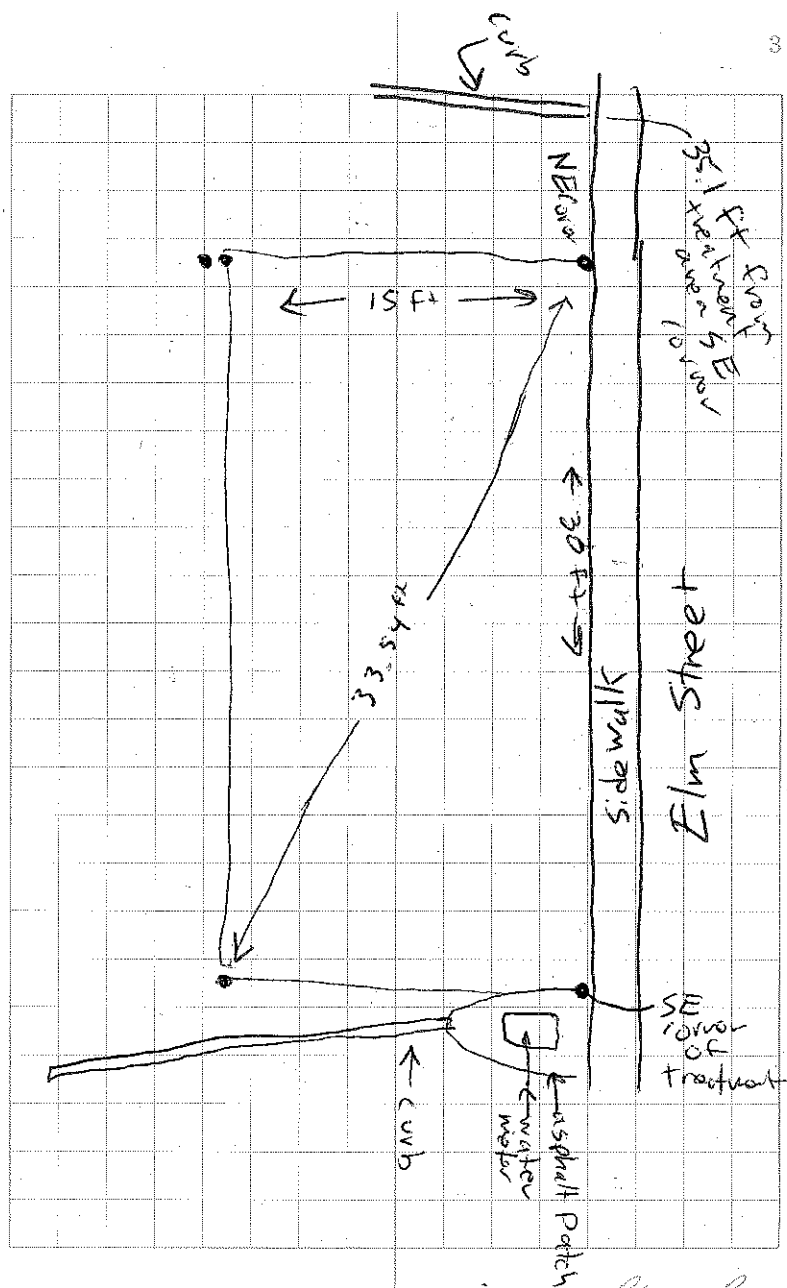
Clear Vinyl Protective Slipcovers (Item No. 30) are available for this style of notebook. Helps protect your notebook from wear & tear. Contact your dealer or the J. L. Darling Corporation

## CONTENTS

[illegible]

9/23/13

- 1245 Arrive @ Western Gas site  
Previously, while in Yakima, I made contact w/ Wil Bonadie of the Yakima Environmental Program. He is out of his office but will let me know when he is back so that I can stop by. Also talked to Rick from Utilities Plus, slightly delayed, expected around 1330. Have talked to Praveen, explained our work; he expressed concern about how long it will take. Have located Ace Hardware & the Yakima Environmental Program office. Now to mark corners of treatment area.
- 1325 Call from Wil, he's back in office, but since utility guy is due my minute I can't





4  
Break away. We Agree we probably won't meet today (Will is leaving in 20 mins). Mary Miller (EPA) is expected ~10AM tomorrow.  
1425 Richard from Utilitars Plus is off site. Also talked to Colin the driller, won't expect to be here before noon tomorrow.

1459 Done marking up site & sketching.

~~1537~~



9/24/13

1000 Meetings w/Elizabeth, Will, Pete (Yakama) & Mary (USEPA) @ Yakama Nation Environmental Program.

Friday is a holiday. Went over plan for next couple days.

1100 Measured WL in MW-02 = 11.74 ft BTOC. Mary had informed me that water will be high due to irrigation, which is shut off @ on October 15.

1314 PS&W on site.

1357 Started drilling 13WGSB-01

1430 Hit refusal @ 15 ft. Will move over (~4 ft East) to try again & if no luck will call it.

Note: Based on recommendation of driller/injector, & consultation w/Mary & JSD, have already cut one bore sample and, due to concerns about

creating pathways for injectors  
A.D.

1457 Mavis (EPA) off site.

1545 Done drilling 13WG ~~13B~~ SB-02

Decision made to start  
injectors tomorrow, due to  
time needed to set up  
& break down injection  
equipment. Also to allow  
bentonite & concrete seal  
to set stronger overnight.

1600 Crew grouting, boring,  
patching asphalt, &  
cleaning up

1645 All crew off site

9/29/13

0745 Bristol on site.

0759 Swing ties

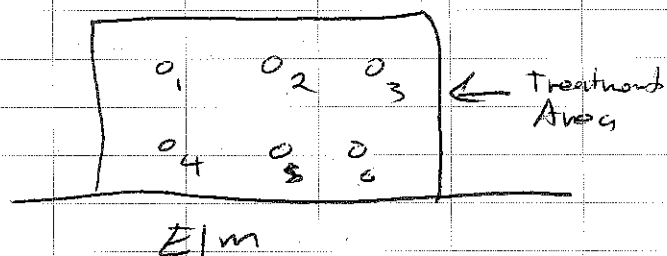
Point	Distance From	
	SE corner	NE corner
Mailbox	10.7	35.2
SW corner	15.05	34.0
13SB-01	10.6	31.7
13SB-02	8.0	29.6
MW-02	11.2	26.5
Injection Pt 01	17.1	
" " 02	18.8	
" " 03	25.5	13.8
" " 04	9.2	21.75
" " 05	17.2	13.75
" " 06	25.25	6.0
NW corner	33.7	15.0
NE corner	30.2	NA
SE corner	NA	30.2
Southern fence post	36.5	6.5

All distances in decimal ft.

0807 Drillers arriving

8  
0810 setting up exclusion zone,  
spill/leak protection, water  
line, other equipment, etc.

0905 Ris setting up on  
injection point 06



Will run injection test  
here, but only w/ 10  
gallons, based on driller/  
injector's experience &  
lithology observations  
yesterday indicating  
material should readily  
accept injection

0910 Water @ 11.75 ft BTOC  
in MW-2, ~~3 feet higher~~ <sup>than</sup> yesterday, same  
as yesterday

0911 Advancing on IP-06

0934 Starting injection test

0941 Test over, MW-2 @ 11.76 ft BTOC

0955 Starting to pump the  
Regen Qx into IP-06  
Injecting ~20 gallons per <sup>MF</sup> foot:  
20 @ 19 ft, 20 @ ~~18 ft~~, 18  
20 @ ~~17 ft~~ 16.5 17.75

1040 Done w/ injections  
SWL @ MW-2 still @ 11.76 ft BTOC

1049 Applying bentonite to  
IP-06, & setting up ris  
on IP-04. IP-04 is  
located 7.4 ft from  
MW-02

1116 Injecting on IP-04  
@ 19 ft bgs.

1123 After 20 gallons injected  
@ 19 ft bgs, SWL @  
MW-02 is 11.68 ft btoc

1141 After 2nd 20 gallons,  
water level @ 11.64 ft btoc.

1148 Injection complete  
SWL @ MW-02 @ 11.67 ft btoc

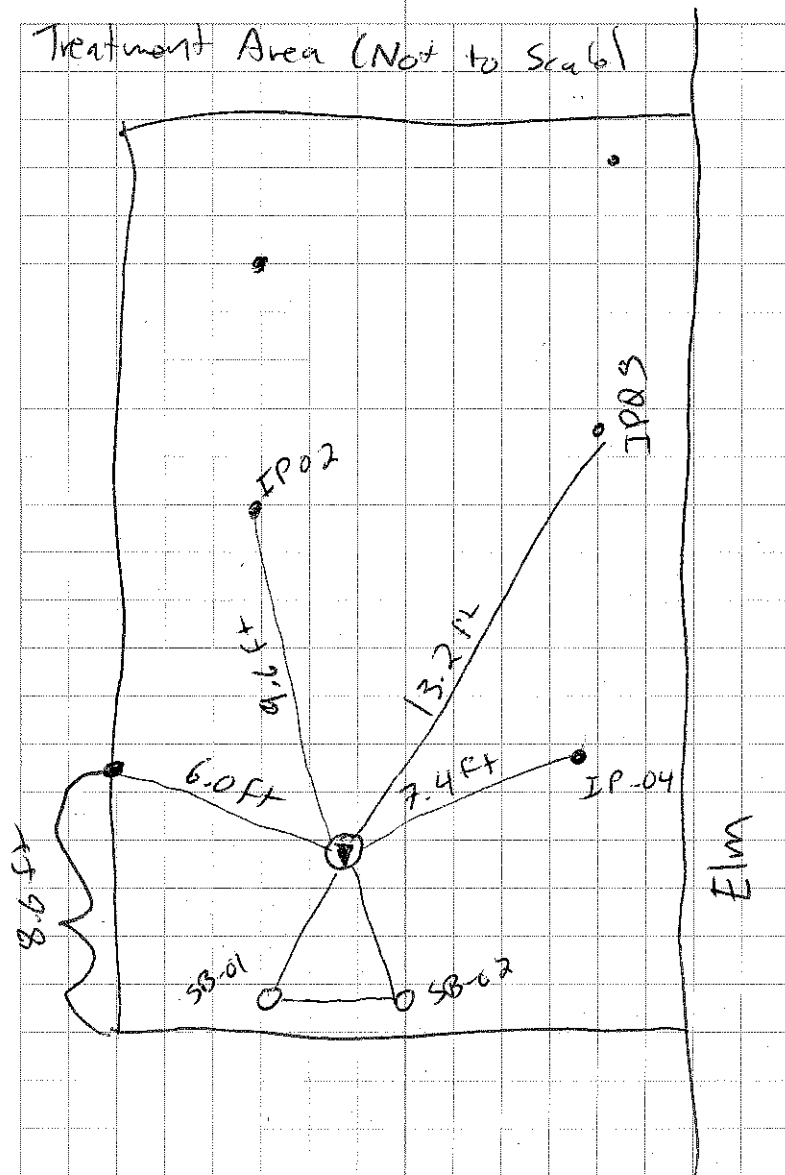
1153 Ris moving on to IP-02  
 Grouting up IP-04.  
 Note Pressure gauge on IP-04  
 injection never moved,  
 indicating that the formation  
 accepted the Resonance  
 readily. On the previous  
 injection (@ IP-06) pressure  
 would bounce, sometimes as  
 high as 200 PSI, even though  
 the injectors would slow the  
 pump way down. However,  
 pressure would always quickly  
 return to 0 PSI.

1204 Driller Brad noted that  
 groundwater @ IP-02  
 (coming up on the push  
 rods) smells like fuel.  
 IP-02 is 9.6 ft from  
 MW-02

1216 Immediately prior to  
 starting injection on IP-02,  
 SWL in MW-02 @ 11.76 ft BTOC

1218 Pressure rising too fast  
 in IP-02. Injectors  
 MP

# Treatment Area (Not to Scale)



Rite in the Rain

slow the pump & raise the  
rod several inches.

1223 At end of 1st 20  
gallons of injectors  
SWL in MW-02 @ 11.70 ft BTOC

1244 At end of 2nd 20,  
SWL in MW-02 @ 11.67 ft BTOC

1252 At end of IP-02 injectors  
SWL in MW-02 @ 11.66 ft BTOC

1258 Rig setting up on IP-05  
& Colin grouting/patching  
IP-02

1315 Lunch Break

1345 off of lunch break  
SWL in MW-02 back @  
11.76 ft BTOC  
IP-05 is 13.2 ft from MW-02

1350 Injectors @ IP-05

1358 After 1st 20 gallons, SWL  
in MW-02 @ 11.75 ft BTOC

1412 After 2nd 20 gallons, SWL  
in MW-02 @ 11.75 ft BTOC

1420 After full injection, SWL  
in MW-02 @ 11.72 ft BTOC

1426 Rig setting up on IP-03  
& Colin grouting up IP-05

1437 SWL in MW-02 back to  
11.76 ft BTOC  
IP-03 17.4 ft from  
MW-02

1458 Started injection @ IP-03

1505 After 1st 20 gallons, SWL  
in MW-02 @ 11.75 ft BTOC

1522 SWL in MW-02 going as  
high as 11.72 ft BTOC  
during injection in IP-03

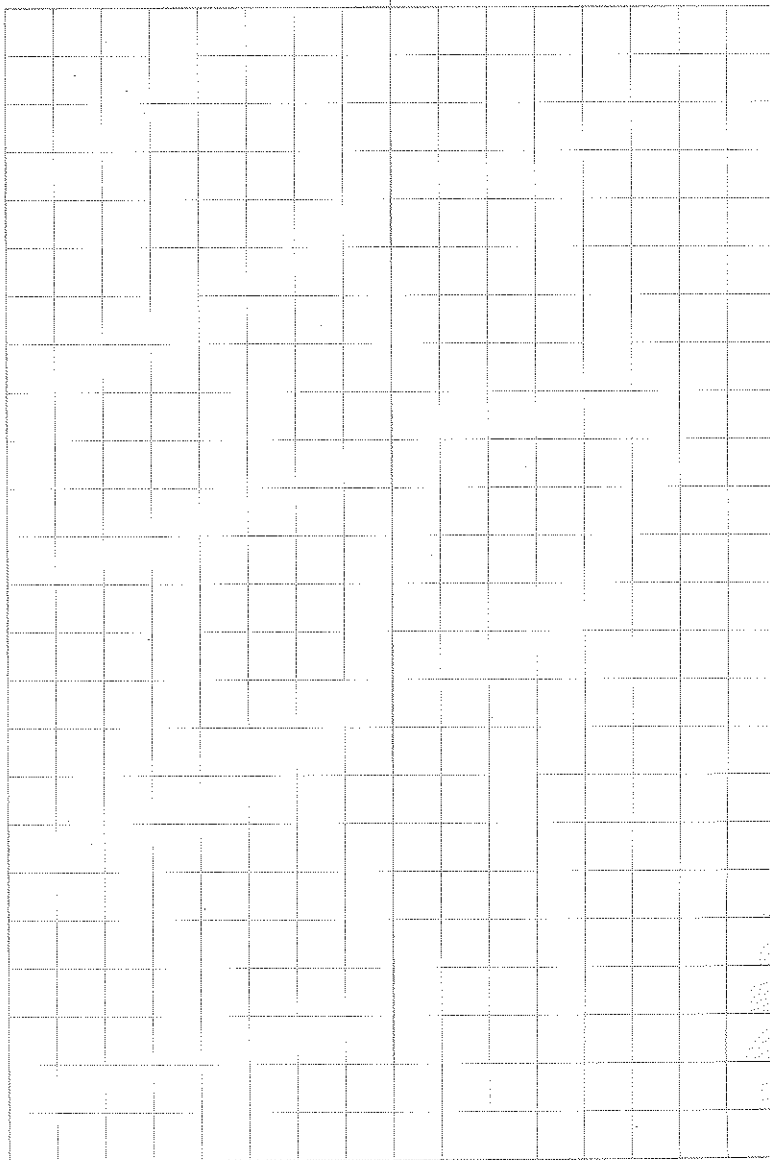
1526 Done w/ IP-03 injection


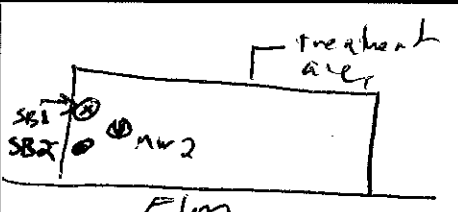
1535 Drilling IP-01. IP-01  
was moved away from  
MW-02. This decision was

made following consultation  
w/ Julie & Bob @ home office  
because injection pts relatively  
close to MW-02 have had  
significant effect on the  
SWL (IP-02 & IP-04, for  
example) the concern  
was that the originally

planned location was so close it would result in the filter pack @ MW-02 being an easy pathway for the Regen Ox, possibly killing the well. IPX1 is now against the west side of the treatment area.

- 1545 SWL in ~~the~~ MW-02 back to 11.76 ft BTOC
- 1550 started injection @ MW-02  
Measured MW-2 TD @ 15.66 ft BTOC, feels soft
- 1557 SWL in MW-02 @ ~~11.32~~ 11.32 ft BTOC
- 1615 SWL in MW-02 @ 11.35 ft BTOC  
injection almost complete
- 1617 Injection complete.
- 1630 Bristol off site to the L  
set to Ak Air Cars before it closes. PS&W will stay on site until approximately 1730 cleaning up the site and packing equipment.



 <b>Bristol</b> ENVIRONMENTAL REMEDIATION SERVICES, LLC		BOREHOLE ID: <b>13WGSB-01</b>						
Client: <b>USEPA</b>		Site Name: <b>Western Gas</b>		Site Location: <b>Toopavish, WA</b>				
Job No. <b>Western Gas</b>		Date Started: <b>9/24/13</b> Completed: <b>9/24</b>		Drill Rig: <b>Power Probe 4500 VTR</b> Drill Company:				
		Driller: <b>Brad</b> Borehole Dia. (ft):		Logged By: <b>Matt Faust</b>				
		Company: <b>Bristol</b>		Sample Method: <b>MacroCore</b> Total Depth:				
Depth in Feet	Sample Interval	Blow Count	% Recovery	Sample ID	DESCRIPTION			PID (ppm) WATER LEVEL USCS Estimated % Fines % Sand % Gravel REMARKS
5					0.1			brown v. fn sandy gravel, dry, 2 inch thick, gravels clay/silt layer present near bottom of interval Drill log Suss pretty loose under a split likely fill
5					0.0			Alternating ~ 6 inch layers of tan v. fn sand & tan silt <del>ls</del> , dry, no petro odor, some thin roots, definitely in place material sand layers are well sorted, silt is w/vfn sand
10					0.1			light gravelly silt tan silty, sandy gravel pretty tight
					0.0			coarse sandy gravel, moist gravel (upto 1.5" diameter, silt sand, no petro odor, rounded saturated @ ~ 14 ft refusal
20					0.0			

Marg 678-641-5775

lab sample



## **ATTACHMENT 4**

### **Permits**

**YAKAMA NATION  
WATER CODE ADMINISTRATION**

**APPLICATION  
INTERIM HYDRAULIC PERMIT**

**FOR OFFICE USE ONLY**			
DATE RECEIVED:		PERMIT CLASS:	
APPLICATION NUMBER:		*Fee:	

\*Payment is due upon application submission

**◀ SECTION I ▶**

**APPLICANT/CONTACT INFORMATION**

Applicant Name:	US Environmental Protection Agency		
Contact Person:	Rob Rau		
Mailing Address:	US EPA Region 10 1200 6th Ave. Suite 900 OCE082 Seattle, WA 98101  Contractor: Bristol Environmental Remediation Services, LLC POC Julie Sharp-Dahl (907) 563-0013 111 W 16 <sup>th</sup> Ave. Third Floor Anchorage, AK 99501		
E-Mail Address:	rau.rob@epa.gov		
Phone:	Work:	(206) 553-6285	Home:
	Cell:	(206) 458-8301	Message:

**◀ SECTION II ▶**

**PROPOSAL**

<b>1) Location of Proposed Activity (legal description):</b>	401 South Elm St, Toppenish, WA
Attach A Map Indicating the Location of the Affected Area On the Reservation. The Map Must Show Sufficient Detail For An Inspector To Locate the Site.	
<b>2) Affected Body of Water:</b>	None known
<b>3) Proposed Activity:</b>	Installation of 6 geoprobe borings to 20 feet bgs; redevelopment of 3 on-site groundwater monitoring wells; 3 temporary monitoring wells to be installed in 3 of the 6 borings which will be removed when borings filled and paved area patched; soil and groundwater samples will be collected and analyzed per the Work Plan. Transportation and disposal of investigation derived waste soil and groundwater.
<b>4) List Any Environmental Information That Has Been Prepared, Or Will Be Prepared, Directly Relating to This Proposal:</b>	
<p>There are a number of previous reports for this site, which will be referenced in the Work Plan to be provided to the EPA, Yakama Environmental Program and the Yakama Water Code agency. The information obtained from a site visit for the Abandoned Tank project conducted in 2008 and 2011 is located in the 2012 Summary report provided in April 2012 (the Water Code has this document).</p> <p>After the completion of the site assessment activities described above, a Site Assessment report will be drafted and submitted to the EPA, Yakama Environmental Program and the Yakama Water Code agency.</p>	

**◀ SECTION III ▶**

**IMPACTS**

**5) List and Describe All Anticipated Impacts Identified From Environmental Impacts Checklist. If Checklist Is Not Used Identify All Impacts Here:**

**Soils:** None. IDW soil from soil borings will be disposed of off-site, and the borings filled with benonite to prevent a preferential pathway for contaminants to groundwater. Filled borings will be paved over.

**Water:** None. Groundwater samples will be collected from on-site monitoring wells, and from temporary monitoring wells which will be removed after sampling and filled with bentonite to prevent a preferential pathway for contaminants to groundwater. Filled borings will be paved over.

**Air:** None. The primary contaminant of concern is diesel.

**Fisheries & Wildlife:** None. Work to be conducted in the town of Toppenish.

**Vegetation:** None. Site is a paved parking lot surrounded by commercial establishments.

**Cultural Preservation:** None known. Site is well developed; site has supported a number of businesses in the past.

**Miscellaneous:** None known

**Other:** Potential impacts may include temporary inconvenience to commercial establishments due to the need to install borings and sample existing groundwater monitoring wells.

**◀ SECTION IV ▶**  
**MITIGATION**

**6) Proposed Mitigation: List Mitigation Measures For Each of the Impacts Identified In Section III Above. Attach Additional Sheets For Description As Necessary:**

Bristol will coordinate with the property owner to ensure the proposed boring locations and the locations of the existing groundwater monitoring wells are free of cars and other objects that may impede the site assessment.

**7) Proposed Project Abandonment Procedures:**

Boring and temporary monitoring wells will be filled with bentonite and paved over. All investigation derived waste will be removed from the site and properly disposed of.

**◀ SECTION V ▶**

**8) Verification:**

I verify that the information provided in this application is complete and true to the best of my knowledge.

haveen Dewani  
Legal Property Owner Signature

8/22/2013  
Date

Julie Sharp Duff  
Applicant Signature  
8/22/13  
Date

**NOTE:**

▪Yakama Nation water use permits do not create exemptions from Wapato Irrigation Project O&M Charges.

▪This application will be processed in accordance with Yakama Nation Water Code Title 60; Chapter 61.01 of the Hydraulic Code.

▪YN Water Code Administration▪

▪P.O. Box 151, Toppenish, WA.98948▪440 East Jones Rd, Wapato, WA. 98951▪Phone (509) 877-7684▪Fax (509) 877-1064▪

Revised:10/07/2010 rrs

**ATTACHMENT 5**  
**Laboratory Analytical Data**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

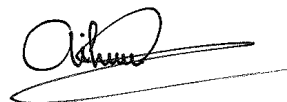
TestAmerica Job ID: 580-40550-1

Client Project/Site: Western Gas, Toppenish, WA

For:

Bristol Env. Remediation Services LLC  
111 W 16th Ave  
Suite 301  
Anchorage, Alaska 99501

Attn: Julie Sharp-Dahl



Authorized for release by:

10/10/2013 5:36:52 PM

Ai Pham, Project Manager I

[ai.pham@testamericainc.com](mailto:ai.pham@testamericainc.com)

Designee for

Melissa Armstrong, Project Manager I

(253)922-2310 x135

[melissa.armstrong@testamericainc.com](mailto:melissa.armstrong@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Case Narrative

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

**Job ID: 580-40550-1**

**Laboratory: TestAmerica Seattle**

### Narrative

#### Receipt

The sample was received on 9/26/2013 10:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0° C.

#### GC/MS VOA

No analytical or quality issues were noted.

#### GC Semi VOA - Method(s) NWTPH-Dx:

In analysis batch 146227, the method blank for preparation batch 146054 contained Motor Oil (>C24-C36) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. The results have been qualified and reported.

No other analytical or quality issues were noted.

#### General Chemistry

No analytical or quality issues were noted.

#### Organic Prep

No analytical or quality issues were noted.



## Definitions/Glossary

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

### Qualifiers

#### GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

**Client Sample ID: 13WGSB02-16**

**Lab Sample ID: 580-40550-1**

**Date Collected: 09/24/13 15:30**

**Matrix: Solid**

**Date Received: 09/26/13 10:30**

**Percent Solids: 88.6**

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.8	0.98	mg/Kg	☼	09/30/13 14:46	09/30/13 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150				09/30/13 14:46	09/30/13 21:47	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		27	6.2	mg/Kg	☼	09/30/13 10:33	10/01/13 17:38	1
Motor Oil (>C24-C36)	17	J B	54	9.9	mg/Kg	☼	09/30/13 10:33	10/01/13 17:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	90		50 - 150				09/30/13 10:33	10/01/13 17:38	1

## General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	89		0.10	0.10	%	—		09/30/13 12:46	1
Percent Moisture	11		0.10	0.10	%			09/30/13 12:46	1

TestAmerica Seattle

# QC Sample Results

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-146177/1-A

Matrix: Solid

Analysis Batch: 146181

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 146177

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		4.0	0.50	mg/Kg		09/30/13 14:46	09/30/13 15:26	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150				09/30/13 14:46	09/30/13 15:26	1
Trifluorotoluene (Surr)	121		50 - 150				09/30/13 14:46	09/30/13 15:26	1

Lab Sample ID: LCS 580-146177/17-A

Matrix: Solid

Analysis Batch: 146181

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 146177

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline	40.0	36.3		mg/Kg		91	68 - 120		
Surrogate	%Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	97		50 - 150						
Trifluorotoluene (Surr)	116		50 - 150						

Lab Sample ID: LCSD 580-146177/3-A

Matrix: Solid

Analysis Batch: 146181

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 146177

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline	40.0	37.8		mg/Kg		95	68 - 120	4	25
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	96		50 - 150						
Trifluorotoluene (Surr)	120		50 - 150						

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-146054/1-A

Matrix: Solid

Analysis Batch: 146227

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 146054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		25	5.7	mg/Kg		09/28/13 14:51	10/01/13 15:49	1
Motor Oil (>C24-C36)	12.1	J	50	9.1	mg/Kg		09/28/13 14:51	10/01/13 15:49	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				09/28/13 14:51	10/01/13 15:49	1

Lab Sample ID: LCS 580-146054/2-A

Matrix: Solid

Analysis Batch: 146227

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 146054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)	500	462		mg/Kg		92	70 - 125		

TestAmerica Seattle

# QC Sample Results

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-146054/2-A

Matrix: Solid

Analysis Batch: 146227

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 146054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Motor Oil (>C24-C36)	500	491		mg/Kg		98	64 - 127
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
<i>o</i> -Terphenyl	88		50 - 150				

Lab Sample ID: LCSD 580-146054/3-A

Matrix: Solid

Analysis Batch: 146227

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 146054

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	500	451		mg/Kg		90	70 - 125	3	16
Motor Oil (>C24-C36)	500	478		mg/Kg		96	64 - 127	3	17
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCSD Qualifier</b>	<b>Limits</b>						
<i>o</i> -Terphenyl	86		50 - 150						

## Lab Chronicle

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

**Client Sample ID: 13WGSB02-16**

**Date Collected: 09/24/13 15:30**

**Date Received: 09/26/13 10:30**

**Lab Sample ID: 580-40550-1**

**Matrix: Solid**

**Percent Solids: 88.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			146177	09/30/13 14:46	NMR	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	146181	09/30/13 21:47	NMR	TAL SEA
Total/NA	Prep	3550B			146054	09/30/13 10:33	JJP	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	146227	10/01/13 17:38	JL1	TAL SEA
Total/NA	Analysis	D 2216		1	146148	09/30/13 12:46	JJP	TAL SEA

### Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

## Certification Summary

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

### Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-14
California	NELAP	9	01115CA	01-31-14
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-14

## Sample Summary

Client: Bristol Env. Remediation Services LLC  
Project/Site: Western Gas, Toppenish, WA

TestAmerica Job ID: 580-40550-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-40550-1	13WGSE02-16	Solid	09/24/13 15:30	09/26/13 10:30

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle  
5755 8th Street E.  
Tacoma, WA 98424  
Tel. 253-922-2310  
Fax 253-922-5047  
www.testamericainc.com

☐ Short Hold

Chain of  
Custody Record

Client <b>Bristol Environmental</b>		Client Contact <b>J. Sharp-Dahl</b>		Date		Chain of Custody Number <b>20304</b>	
Address <b>111 W 16th Ave Ste 301</b>		Telephone Number (Area Code)/Fax Number <b>(407) 563-0013</b>		Lab Number <b>40550</b>		Page <b>1</b> of <b>1</b>	
City <b>Anchorage</b>	State <b>AK</b>	Zip Code <b>99501</b>	Sample <b>M. Faust</b>	Lab Contact	Analysis (Attach list if more space is needed)		
Project Name and Location (State) <b>Western Gas, Topenish, WA</b>			Billing Contact <b>Julie Sharp-Dahl</b>	Special Instructions/ Conditions of Receipt			
Contract/Purchase Order/Quote No. <b>34130043</b>							

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	MeOH	Containers & Preservatives
13WGSBQ2-16	9/24	1530				X	1							
580-40550 Chain of Custody														
Cooler/TB Dig (Recor 4.1 unc40)														
Cooler Desc as per 10/11/02 Lab 2020														
WetPacks Packing 54 BBS														
W/CS GARDSTREAR														

Cooler	<input type="checkbox"/> Yes <input type="checkbox"/> No	Cooler Temp: _____	Possible Hazard Identification	<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Return to Client <input type="checkbox"/> Archive For _____ Months	Sample Disposal	<input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Disposal By Client	(A fee may be assessed if samples are retained longer than 1 month)
Turn Around Time Required (business days)	<input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 5 Days <input type="checkbox"/> 10 Days <input checked="" type="checkbox"/> 15 Days <input type="checkbox"/> Other _____						
1. Relinquished By Sign/Print <b>M. Faust</b>	Date <b>9/25</b>	Time <b>1600</b>	1. Received By Sign/Print <b>R.T. M. Davis</b>				
2. Relinquished By Sign/Print	Date	Time	2. Received By Sign/Print				
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print				
Comments							

DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

TAL-8274-S80 (0210)





P.O. BOX 68900 SEATTLE, WA 98168  
800-225-2752 ALASKACARGO.COM

**SHIPPER**

Bristol Environmental  
111 W 16th Ave  
Anchorage, AK 99501

**CONSIGNEE**

Test America Laboratories Inc  
5755 8th Street E  
Tacoma, WA 98498

AWB Number	Pieces	Weight	Origin / Dest	Nature of Goods	Arriving Flight Details	Customs
027-76135732	1	6.0 Lb	YKM-SEA	SAMPLES	AS 2001 25-Sep-2013	

Storage Locations: GSX2 1

**LOCAL CHARGES :**

Bonded Warehouse ☐

Total Local Charges:	USD	0.00
VAT 0.00%:	USD	0.00
Grand Total:	USD	<b>0.00</b>

PO Number

10:30

**RECEIPT STATEMENT**

The undersigned acknowledge the receipt of above mentioned consignment complete and in good condition.

Date: 26-Sep-2013

Time: 09:57

Driver: FRANCISCO

Registration: \_\_\_\_\_

Signature:  

## Login Sample Receipt Checklist

Client: Bristol Env. Remediation Services LLC

Job Number: 580-40550-1

Login Number: 40550

List Source: TestAmerica Seattle

List Number: 1

Creator: Balles, Racheal M

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	